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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MONBLEAU, DAVIENNE N

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/12/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/425,015

Applicant(s)

OHMI ET AL.

Examiner

Davienne Monbleau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 41-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 21-29, 31 and 33-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 and 5. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Invention I in Paper No. 9 is acknowledged.

Claims 41-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Information Disclosure Statement

The IDS filed on 2/18/00 and 3/24/00 have been acknowledged and a signed copy of the PTO-1449s are attached herein.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Gas Supply Path Structure for a Gas Laser".

The phrase "sound speed" is used throughout the specification and in the claims (i.e. page 3 line 21 and page 18 line 20). For clarity purposes, a more accurate phrase would be "speed of sound".

Claim Objections

Regarding Claims 18, 19 and 21-29, the phrase "said gas supply path structure for supplying said laser gas" is stated in the independent base claim, Claim 17. It is repetitive and is not necessary in the dependent claims.

Regarding Claims 31 and 33-39, the phrase "said gas supply path structure group for supplying said laser gas" is stated in the independent base claim, Claim 30. It is repetitive and is not necessary in the dependent claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29 and 40 contain the trademark/trade name Sirocco. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a fan and, accordingly, the identification/description is indefinite

Claims 30-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claim 30, in lines 2-5, the phrase "a gas supply path structure group...connected in series" is vague. It does not clearly define the structure of the apparatus.

Claims 31-40 are objected to as being dependent on an indefinite base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 3-5, 7, 8, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Krasnov (U.S. Patent No. 6,198,762). Regarding independent Claims 1 and 13, Krasnov discloses in Figure 1B a compressible fluid supply path structure of a convergent-divergent nozzle type comprising a fluid inlet (3a and 1a), a throat portion

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(1B) for controlling said compressible fluid to a speed less than a sound speed, a fluid outlet (3B and 1c) and a circulation system (15, 16 and 18).

Regarding Claims 3 and 4, Krasnov discloses in column 3 lines 22-27 that said path structure is without an inflection point and is thus shaped so as to decrease disturbance caused by said compressible fluid.

Regarding Claims 5 and 6, Krasnov discloses in Figure 1B pressure correcting means (18) near said fluid inlet.

Regarding Claims 7 and 8, Krasnov discloses in Figure 1B temperature correcting means (17A and 17B), wherein said temperature correcting means has a cooling function and said cooling is effected near said fluid outlet.

Regarding Claim 10, Krasnov discloses in Figure 1B that said path structure is symmetric with respect to said throat portion at the center.

Regarding independent Claims 11 and 15, Krasnov discloses in Figure 1B a compressible fluid supply path structure of a convergent-divergent nozzle type comprising a fluid inlet (3a and 1a), a predetermine portion/throat portion (1B) for controlling said compressible fluid to a speed less than a sound speed, a fluid outlet (3B and 1c), temperature correcting means (17A and 17B) and a circulation system (15, 16 and 18).

Regarding Claims 12 and 16, see discussion on Claim 8.

Regarding independent Claim 17, Krasnov discloses in Figure 1B a laser oscillating apparatus comprising a gas supply structure of a convergent-divergent nozzle type, wherein said gas supply structure comprises a fluid inlet (3a and 1a), a

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throat portion (1B) for controlling said compressible fluid to a speed less than a sound speed and a fluid outlet (3B and 1c).

Regarding Claim 18, Krasnov discloses in Figure 1B a circulation system (15, 16 and 18).

Regarding Claim 21, see discussion on Claim 4.

Regarding Claim 22, see discussion on Claim 5.

Regarding Claim 23, see discussion on Claim 7.

Regarding Claim 24, see discussion on Claim 8.

Regarding Claim 28, Krasnov discloses in column 5 lines 50-54 that said circulation system comprises a blower (18), such as a fan.

Regarding Claim 29, see discussion on Claim 28. Furthermore, it is not obvious how the Sirocco fan has any benefit over the fan in Claim 28.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 9, 14, 19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762). Regarding Claims 2, 14 and 19, Krasnov does not teach a critical pressure. However, it would have been obvious to one of ordinary skill in the art that the ratio of a pressure at said fluid inlet to a pressure

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at said fluid outlet must not be less than a critical pressure to ensure minimal shock waves from occurring at the fluid outlet. Prevention of shock waves is a known problem in the art of gas lasers.

Regarding Claims 9 and 25, Krasnov teaches in column 7 lines 56-58 that said throat portion (1c) might have a vertical width of 4mm to 40 mm. Since the width of the throat portion affects the flow velocity, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate vertical width adjusting means to further control the flow of the gas.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762) in view of Azzola et al. (U.S. Patent No. 6,212,211).

Krasnov does not teach that said gas is an excimer laser gas. Azzola et al. Teaches in column 1 lines 26-27 that said laser gas is an excimer laser gas that is a mixture of F₂ and Kr. It would have been obvious to one of ordinary skill in the art to use an excimer gas in Krasnov, as taught by Azzola et al., to create a different wavelength laser output.

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762) in view of Sander et al. (U.S. Patent No. 4,317,087). Krasnov does not teach that said circulation system comprises a bellows pump. Sander et al. teaches in column 3 lines 58-65 using a bellows pump in a gas laser to circulate the gas medium. It would have been obvious to one of ordinary skill in the time of the art to use a bellows pump in Krasnov, as taught by Sander et al., because any suitable means may be used to circulate the gaseous medium.

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Claims 30, 31, 33-36, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762) in view of Ando et al. (U.S. Patent No. 4,911,805). Regarding independent Claim 30, Krasnov teaches in Figure 1B a laser oscillating apparatus comprising a gas supply structure of a convergent-divergent nozzle type, wherein said gas supply structure comprises a fluid inlet (3a and 1a), a throat portion (1B) for controlling said compressible fluid to a speed greater than a sound speed and a fluid outlet (3B and 1c). Krasnov does not teach a group of path structures connected in a series. Ando et al. teaches in Figure 6D and in column 8 lines 48-60 that at least two path structures, of the convergent-divergent nozzle type with throat portions (2 and 2'), may be connected in series. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a group of path structures connected in series in Krasnov, as taught by Ando et al., to further control and vary the flow velocity of the gas.

Regarding Claim 31, see discussion on Claim 18.

Regarding Claim 33, see discussion on Claim 4.

Regarding Claim 34, see discussion on Claim 5.

Regarding Claim 35, see discussion on Claim 7.

Regarding Claim 36, see discussion on Claim 9.

Regarding Claim 39, see discussion on Claim 28.

Regarding Claim 40, see discussion on Claim 29.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762) in view of Ando et al. (U.S. Patent No. 4,911,805), as

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applied to Claim 30 above, and further in view of Azzola et al. (U.S. Patent No. 6,212,211). Krasnov and Ando et al. do not teach that said gas is an excimer laser gas. Azzola et al. Teaches in column 1 lines 26-27 that said laser gas is an excimer laser gas that is a mixture of F₂ and Kr. It would have been obvious to one of ordinary skill in the art to use an excimer gas in Krasnov and Ando et al., as taught by Azzola et al., to create a different wavelength laser output.

Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasnov (U.S. Patent No. 6,198,762) in view of Ando et al. (U.S. Patent No. 4,911,805), as applied to Claim 30 above, and further in view of Sander et al. (U.S. Patent No. 4,317,087). Krasnov and Ando et al. do not teach that said circulation system comprises a bellows pump. Sander et al. teaches in column 3 lines 58-65 using a bellows pump in a gas laser to circulate the gas medium. It would have been obvious to one of ordinary skill in the time of the art to use a bellows pump in Krasnov and Ando et al., as taught by Sander et al., because any suitable means may be used to circulate the gaseous medium.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Levatter et al. (U.S. Patent No. 4,005,374) teaches in Figure 2 a gas laser comprising a symmetric convergent-divergent gas supply path structure, temperature controlling means (31, 32, 34 and 35), and blower (28) for circulating said gas. Von Buelow et al. (U.S. Patent No. 5,206,876) teaches in Figure 1 a gas laser

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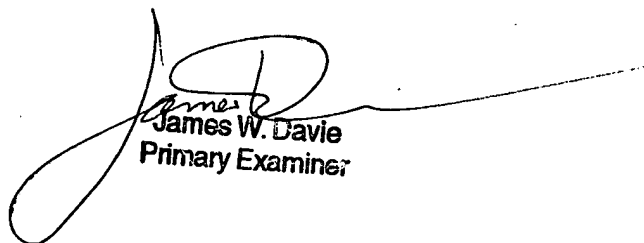
comprising a supersonic nozzle (20), a fluid inlet (22), a nozzle throat (24), a fluid outlet (26) and circulating pump (50). Altmann (U.S. Patent No. 4,413,345) teaches in Figure 1 a gas laser comprising a convergent-divergent nozzle gas supply path structure with a throat portion (2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is 703-306-5803. The examiner can normally be reached on Mon-Fri 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dzierzynski can be reached on 703-308-4822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

DNM
December 5, 2001



James W. Davie
Primary Examiner